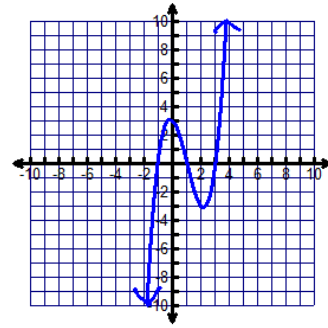


SM3H 1.4 odd answer key

1.

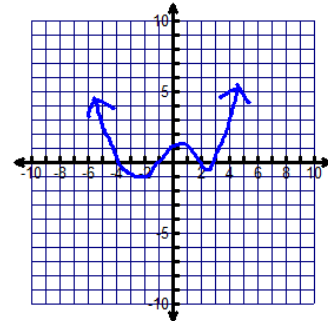
Zeros	Multiplicity	Touch/Cross
-1	1	Cross
1	1	Cross
3	1	Cross

$$\lim_{x \rightarrow \infty} f(x) = \infty \quad \lim_{x \rightarrow -\infty} f(x) = -\infty$$



3.

Zeros	Multiplicity	Touch/Cross
-4	1	Cross
-1	1	Cross
2	1	Cross
3	1	Cross

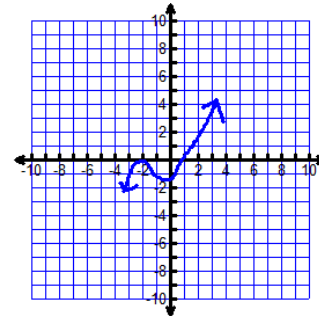


$$\lim_{x \rightarrow \infty} f(x) = \infty \quad \lim_{x \rightarrow -\infty} f(x) = \infty$$

5.

Zeros	Multiplicity	Touch/Cross
-2	2	Touch
1	3	Cross

$$\lim_{x \rightarrow \infty} f(x) = \infty \quad \lim_{x \rightarrow -\infty} f(x) = -\infty$$



7. f

9. a

11. b

13.

$$\lim_{x \rightarrow \infty} f(x) = \infty \quad \lim_{x \rightarrow -\infty} f(x) = \infty$$

Zeros	Multiplicity	Touch/Cross
-1	Odd 3 or 1 or 1	Cross
1	Even 2 or 2 or 4	Touch
3	Odd 1 or 3 or 1	Cross

15. b, c

17. $(3y - 4)(3y + 4)$

19. $(4z + 3)(16z^2 - 12z + 9)$

21. $(3k - 4)(k - 5)$

23. $5(5a - 9)(a + 3)$